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ENTOMOLOGICAL NEWS

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The Plesiallotype Female of Oligoclada umbricola Borror, 1931

By EDWARD J. KORMONDY, Department of Zoology, Oberlin College

In the preparation of type specimens of Odonata in the C. H. Kennedy Collection acquired by the University of Michigan Museum of Zoology, a female labelled *"Oligoclada umbricola* Borror, Allotype" by Kennedy, was found. The specimen, which Kennedy undoubtedly intended to describe, was in poor condition with the hind wings free, and the abdomen broken into several pieces. Two other females were found in the collection; one had been determined as *O. umbricola* by Borror; the other was in an envelope containing a male *umbricola,* not seen by Borror but presumably seen by Kennedy. The three females, along with eight males, were collected for Kennedy by William Clarke-MacIntyre; they are from Province de los Rios, Ecuador, and were collected March 4–April 12, 1938. These records extend the known range of the species southward from Colombia and Venezuela (Borror, 1931).

The female *umbricola* is distinguished, as is the male, by the structure of the occiput. This differs from the male only in the presence of two posterio-medial brownish yellow elongate spots. Additional differences from the male are described below.

The plesiallotype, labelled "Ecuador: Province de los Rios, Playas, April 12, 1938, W. Clarke-MacIntyre," is deposited in the type collection of the University of Michigan Museum of Zoology.

The measurement of the plesiallotype are followed in parentheses, by those of Kennedy's "Allotype" (March 4, 1938), and the Borror determined specimen (March 4, 1938), respectively.

Abdomen: 16.4 mm. (16.0, 16.0); hind wing: 21.0 mm. (21.8, 21.4); stigma: 2.4 mm. (2.2, 2.4).

Venational Characters. Antenodals in front wing: 9½ (9½, 9½); postnodals in front wing: 9 (8, 9); antenodals in hind wing: 7 (7, 7); postnodals in hind wing: 8 (8, 9); triangle in front wing: free (free, crossed); cells bordering proximal side of bisector of anal loop: 9 (8, 7); cells bordering distal side of bisector of anal loop: 7 (7, 7); interpolated cells in distal half of anal loop: 2 (2, 2); rows of post loop cells in hind wing: 4 (4, 4).

Occiput, smooth, convex; posterior margin swollen, very slightly bilobed; dark brown, metallic except for two posteriomedial brownish yellow elongate spots. Vertex blue-black, metallic. Frons purple black, metallic. Postclypeus gray, anterio-lateral edges brown. Anteclypeus brownish-gray. Lower two-thirds of labrum black; upper third brownish yellow, broadening medially into a v-shaped encroachment on the black. Labium black; lateral lobes black medially, lateral ¾ yellowish white.

Thorax dark reddish brown; slightly pruinose. A large yellowish spot on mesepisternum approximately equidistant from humeral suture and mid-dorsal carina; a narrow yellowish stripe in front of the spiracle on mesepimeron; another, broader, above and slightly in front of spiracle on metepisternum, and almost contiguous with mesepimeron stripe; another, less distinct on upper part of metepimeron. Legs brownish black, moderately pruinose. Mesal side of prothoracic trochanter and proximal mesal third of femur yellowish white. Penultimate spine on externo-anterior angle of hind femur about ¾ as long as ultimate spine. Tooth on tarsal claw reduced to a small but definite notch located at about ⅔ the length. Wings hyaline; pigmented area at base of hind wing very faint brownish yellow, slight but more diffuse than in male.

Abdomen reddish brown; sides of segments 4–7 increasingly black; 8–10 all black; appendages black; transverse carinae of segments 1–3 black; that of 4 brown dorsal. Vulvar lamina:

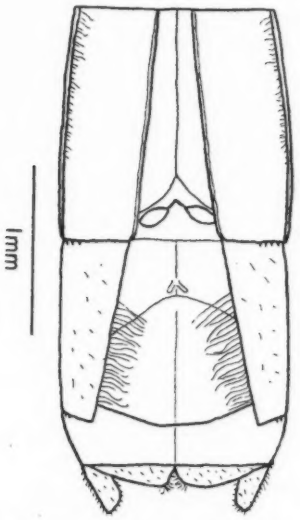

FIG. 1. Terminal abdominal segments of female *Oligoclada umbricola* Borror.

terminal $\frac{1}{6}$ of mid-ventral carina elevated, rounded; hind margin developed as two elongated oval thickenings between which is a v-shaped incision (fig. 1).

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Some Observations upon the Fauna of the Winter Nests of Euproctis chrysorrhoea (Lepidoptera)

By Jerzy J. Lipa, Laboratory of Agricultural Entomology, Institute of Plant Protection, Puławy, Poland

The caterpillars of *E. chrysorrhoea* construct nests in which they hibernate. I collected these nests during the winter and summer, and have also located nests in greenhouses. From the nests collected during the winter emerged the caterpillars of *E. chrysorrhoea,* and also larvae and adults of other species. However, from the nests collected during the summer (when the caterpillars had already left the nests) there emerged only the larvae and adults of other species.

Most interesting was the frequent occurrence of mixed winter nests in which there hibernated the caterpillars of both *E. chrysorrhoea* and *Aporia crataegi.*

During the winter the following species were observed in the nests:

Lepidoptera: The caterpillars of *A. crataegi* and other species.
Hemiptera: Larvae of *Lecanium corni* and *Lecanium* sp.
Acarina: *Tetranychus urticae* and other Tetranychidae.
Hymenoptera parasitica: *Eupteromalus micropterus, E. nidulans, Monodontomerus aereus,* and other species.
Araneida: *Araneus cucurbitinus, Philodromus* sp., *Clubiona* sp., *Theridium notatum.*
Apterygota: Various species.

During the summer, I have observed the following:

Hemiptera: *Lygus pabulinus, Plesiocoris rugicollis, Kleidocerys resedae, Anthocoris nemorum, Arma custos,* and others.
Coleoptera: *Subcoccinella 24-punctata, Coccinella 7-punctata, C. bipunctata, Phalacrus fimentarius,* and others.
Acarina: various species.

Discussion. The winter nests of *E. chrysorrhoea,* during both winter and summer, are the hiding places of the larvae and adults of other species. Some of these are predators or parasites, but since the majority are pests, the removal of the nests from trees is desirable.

Two New Species in the Genus Pompilinus (Hymenoptera: Psammocharidae) with Photomicrographs of the Genitalia and Subgenital Plate of the Male

By R. R. Dreisbach, Midland, Michigan

Pompilinus clavipes n. sp.

Holotype male: Color completely black with the faintest very short, white line on the upper posterior orbits, and the tips of the mandibles reddish; only very scattered short hair over the front, vertex, and the clypeus, with longer hair on the upper posterior orbits, and under parts of the head; almost the whole body sericous, the front, clypeus, almost all the thorax, and the legs mostly covered with sericous hair; very shiny patch of a little longer hair on the posterior orbits; when seen from the side the front is visible above the eyes, the vertex is very slightly raised, and the nearer ocellus is completely visible; the clypeus is almost flat but slightly convex in middle; when seen from the front, a small rectangular plateau on the vertex carries the ocelli; the antennae are short and the joints are more than twice as long as wide with a silvery sheen when viewed in reflected light; the apical joint is blunt; the first and fourth joints are longer than the third; the ratio of the first four and last two joints are as 15:6:12:15:10:12; the pronotum rises in a smooth curve and is almost flat on top; the propodeum has a slight slope to the rear and the posterior and dorsal parts are connected by a smooth curve; propodeum is without hair but covered with appressed, beautiful silvery pubescence; the wings are brownish, hyaline, with the space beyond the cells considerably darker; the ratios of the joints of the posterior legs starting with the femur are as 83:81:63:27:22:15:20; the posterior tibia with its longest spur two thirds as long as its metatarsal joint; the distance between the lateral ocelli is equal to the distance from them to the eye; the interocular width at the vertex is slightly more than at the clypeus; the clypeus is one third times as long as its width; head 1.14 times as wide as long; the length of the head and thorax is 3.98 mm.; abdomen same length; fore

wings 5.96 mm.; rear wings 4.64 mm.; genitalia length 1.32 mm., width 0.66 mm.; subgenital plate 1.0 mm., width 0.33 mm.

Holotype male: 8/8/1952, R. R. Dreisbach, CONLON, Texas. (MCZ).

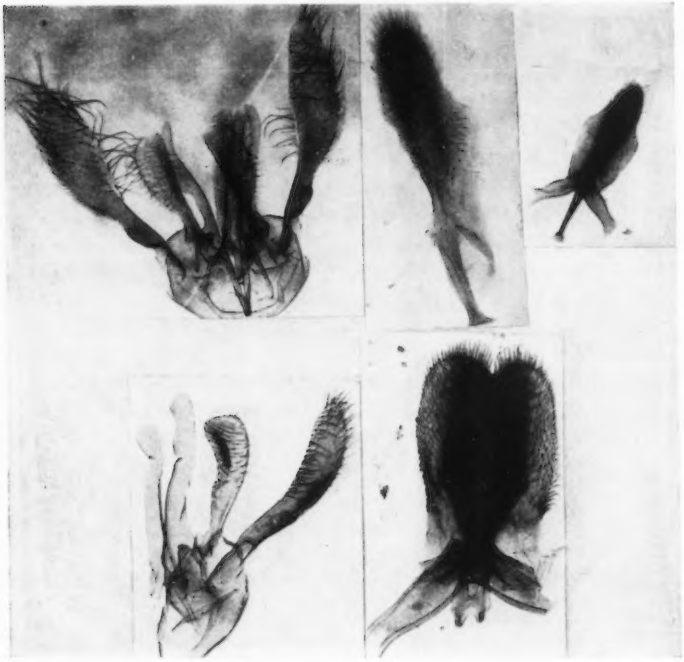
Genitalia of this species are very distinctive by virtue of the much broadened parameres, expanded very sharply about the basal third, and by the very long rather heavy hairs arising from the inner edge and the long slightly thinner hairs on outer edge; the subgenital plate is unique in shape, and is suddenly reduced about the apical third; heavily haired about this width to near the base and with semi-translucent sides on basal two-thirds.

Paratype males (13): Sand dunes Medora Kans., VII-7-53. H. E. Evans (8). USNM (1), MCZ (1), RRD (3).

Pompilinus drakei n. sp.

Holotype male: Color black all over with just the faintest trace of a white streak on upper posterior orbits, and apices of the mandibles reddish; thinly placed hair on the vertex, under the head and a few very short hairs on the pronotum, practically none on the propodeum; when seen in facial aspect, the front just above the antennae is slightly raised sloping to the vertex, clypeus slightly arched in front of apex, slightly raised above the mouth; head slightly wider than long; antennae very slender with the third joint the same length as the first and slightly longer than the fourth, ratios of the first four antennal joints and the last two are as 18:7:17:15:11:15; the apical joint with the base slightly smaller than the apex of the 12th; the posterior ocelli are the same distance from the eyes as they are from each other; the interocular distance at the vertex about the same as at clypeus; clypeus one half as long as wide; the pronotum rises in a smooth curve ascending all along the rear, not flat on top, only very slightly angular on the posterior edge; propodeum almost horizontal on top but very slightly inclined with curve of the posterior surface very short; wings almost hyaline except considerably darker beyond the cells; third cubital cell very strongly petiolate; first intercubital vein meets the second cubital cell beyond the middle, the second intercubital vein meets

the third cubital cell at just about the middle; length of the second cubital cell on the radius only about half its length on the cubitus; second recurrent vein almost straight but sloping back-



Pompilinus clavipes n. sp.
Upper row. Left: genitalia of holotype. Middle: subgenital plate of holotype. Right: subgenital plate of paratype.

Pompilinus drakei n. sp.
Lower row. Left: genitalia of holotype. Right: subgenital plate of holotype.

wards rather strongly; abdomen widest at the apex of the second tergite and almost parallel to the apex; legs with a very few spines; ratios of the joints of the posterior legs starting with the

femur are as 95:92:60:28:22:13:20; posterior tibiae with longest spur three-fourths the length of its metatarsal joint; length of head and thorax 3.98 mm.; abdomen same length; fore wings 5.63 mm.; rear wings 4.64 mm.; length of genitalia 1.06 mm., width 0.53 mm., length of subgenital plate without stem at base 0.93 mm., width 0.53 mm.

Holotype male: Cranberry Lake, N. Y. 7/28/1917. C. J. Drake acc. 5136 (Am. Mus.)

The subgenital plate of this species is almost parallel-sided with a very strong emargination at the apex. This is the only species in the genus with an emarginate subgenital plate. Genitalia with the parameres slightly club-shaped and with a curved ridge on the surface about the basal fourth, basad of which are a few spines in spine pits; the volsellae bent inward about the middle and apicad of this a broadened flat surface; the parapenial lobes and aedeagus both have an indentation inside above the middle.

These two species will go in Evans'[1] key as follows:

6. Subgenital plate more or less completely flat; apex evenly rounded as broad as rest of disc, in one case strongly emarginate; volsellae rounded apically 6a
6. Subgenital plate of different form generally somewhat elevated medially, apex acute or subacute; volsellae not rounded apically 7
6a. Subgenital plate strongly emarginate medially at apex; volsellae with a flat surface on inside and curved; volsellae with an indentation above middle on inside; parameres not so heavy and club-shaped; no upright hair on propodeum .....*drakei* n. sp.
6a. Subgenital plate not emarginate, rounded; volsellae without a flat surface not curved but straight on inside and volsellae without an indentation; parameres heavy, more club-shaped; propodeum hairy ....*tenebrosus* (Cress.)
11. Subgenital plate obtusely pointed, disc convex, median line not sharply elevated or, if somewhat so, the plate suddenly narrows about apical third; parameres very broad to apex 11a
11. Subgenital plate with the median line distinctly elevated above rest of disc, the apex not tapered gradually to an obtuse angle; parameres not broad at apex 12

[1] Evans, H. E. 1951. Trans. Amer. Ent. Soc., LXXVI, p. 281.

11a. Parameres very heavy, club-shaped, widest about middle tapering to an obtuse point, very long hair (as long as width) on inside edge and almost as long hair on outside edge; subgenital plate suddenly reduced at apical third and slightly tapering from there to an obtuse tip ....*clavipes* n. sp.

11a. Parameres rather flat and increasing in width from base to tip where they are the widest, no long hair on their inside edges nor on their outside edges, only short hair; subgenital plate gradually tapering to a very obtuse apex .....*insolens* (Banks)

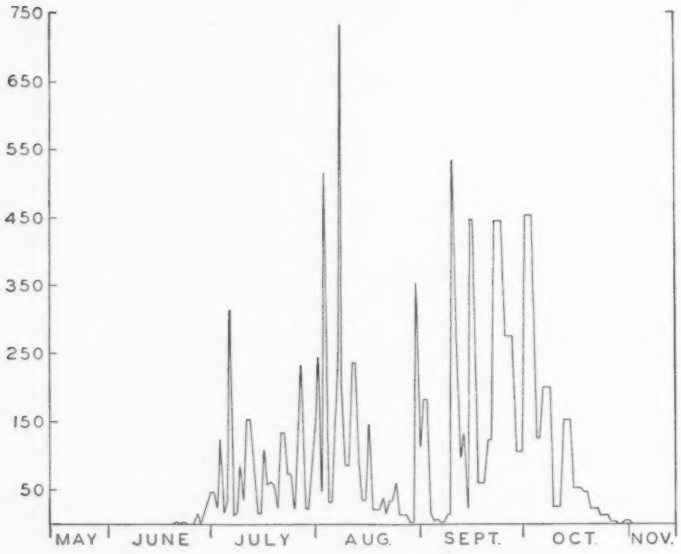
Studies of the Byron Bog in Southwestern Ontario. VI. Seasonal Distribution of the Wood Gnat, Silvicola marginata (Say) (Diptera: Silvicolidae)

By W. W. Judd, Department of Zoology, University of Western Ontario, London, Ontario

In the description of the Byron Bog (Judd, 1957) it was pointed out that one method of collecting insects in the bog was the use of a baited trap. The position of the trap in the bog is shown by Judd (1957) and its mode of operation is also described (Judd, 1956). The trap was in operation during 1956 from May 15 to November 15 and over that period flies and other insects were removed from the trap each day and the numbers of the several species trapped were recorded. Among the insects so callected was the wood gnat, *Silvicola marginata* (Say). The insect was identified by Dr. A. Stone, Division of Insects, United States National Museum, who retained five specimens for the U.S.N.M. Other specimens are deposited in the collection of the Department of Zoology, University of Western Ontario.

The first gnat was trapped on June 21 and during the whole period of operation of the trap 14,855 gnats were trapped, the last being caught on November 1. Their seasonal distribution

is shown in fig. 1. The greatest number caught on one day, 731, appeared in the trap on August 9. Between July 1 and August 8 the daily catch was sorted according to sex and yielded 1,963 ♂♂ (51%) and 1,883 ♀♀ (49%).



Seasonal distribution of *Silvicola marginata* (Say)

Edwards (1923) points out that *Silvicola* (*Anisopus*) *marginata* (Say) is distinct from the European *punctatus*, for which several records of distribution in North America occur in the literature (e.g. Leonard, 1926). He based his decision on examination of specimens of *marginata* collected at Montreal, Quebec. The presence of the large population of *S. marginata* in the Byron Bog is in accord with the known habits of the gnats of this family as recorded by authors (e.g. Curran, 1923), for they occur near the edges of woods and in the vicinity of swamps and breed in wet or moist decaying organic matter.

ACKNOWLEDGMENT

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Pennsylvania State University, University Park, Pa.

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1917

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1919

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Notes and News in Entomology

Under this heading we present, from time to time, notes, news, and comments. Contributions from readers are earnestly solicited and will be acknowledged when used.

Hymenoptera of the Budapest Museum

Dr. Erdös József of Tompa, Hungary, has written to me that the wing of the Hungarian National Museum in Budapest that contains the Hymenoptera collection has remained intact. The present curator of Hymenoptera is Némethné Bajári Erzsébet, a specialist in the families Ichneumonidae, Sphegidae and Mutillidae.—J. C. BRADLEY

Publication Announcement

The Proceedings of the Tenth International Congress of Entomology, held in Montreal, Canada, in August, 1956, are expected to be ready for distribution in late 1958. The price is $75.00 postpaid for the set of four volumes. Since a limited number will be printed only orders received before May 1, 1958, can be guaranteed.

The Proceedings will contain nearly 700 scientific contributions, many accompanied by illustrations. The four volumes, comprising over 4200 pages, will constitute an indispensable work of reference for many years since most of the material is not being published elsewhere.

For further information write: Tenth International Congress of Entomology, Science Service Building, Ottawa, Canada.

Centennial News

The committee for planning the CENTENNIAL COMMEMORATION in 1959 of the founding of the American Entomological Society reports the following contributors during the past year to the special fund for this purpose:

Dr. R. David Anderson, Downingtown, Pa.
Mr. Robert C. Bechtel, Reno, Nev.
Mr. Raymond Q. Bliss, Philadelphia, Pa.
Mr. Marvin H. Brunson, Moorestown, N. J.
Dr. Philip P. Calvert, Cheyney, Pa.
Dr. Kenneth W. Cooper, Rochester, N. Y.
Dr. A. da Costa Lima, Rio de Janeiro, Brazil.
Dr. H. R. Dodge, Missoula, Mont.
Dr. Howard Evans, Ithaca, N. Y.
Dr. Richard M. Fox, Pittsburgh, Pa..
Mr. Charles T. Greene, College Park, Md.
Dr. J. Linsley Gressitt, Honolulu, Hawaii.
Dr. Edwin R. Helwig, Boulder, Colo.
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Mr. D. M. Fleming, Philadelphia, Pa.
Mr. J. A. G. Rehn, Philadelphia, Pa.
Dr. Rudolf G. Schmieder, Elwyn, Pa.
Dr. R. E. Snodgrass, Washington, D. C.
Dr. Harry G. Walker, Rome, Italy.
Dr. Joseph L. Williams, Philadelphia, Pa.

These 21 contributors are in addition to the 15 listed in the ENTOMOLOGICAL NEWS, December 1956 (p. 266) and the total is now about 24% of the present membership. The primary purpose of the fund is to present a special program marking the beginning of the second century for the Society, early in February or March 1959, and for publishing this as a greatly enlarged issue of the NEWS. Further contributions will be welcomed and will be acknowledged here. They should be sent to the American Entomological Society, 1900 Race Street, Philadelphia 3, Pa.

Review

ANNOTATED CATALOGUE OF AFRICAN GRASSHOPPERS. Compiled by H. B. Johnston, with a preface by B. P. Uvarov. xxii + 833 pp. Cambridge, England (Cambridge University Press, published for the Anti-Locust Research Centre). 1956. Price 5£, 5 shillings (in the United States $18.50).

The preface of this timely and most important reference work, for both systematic and economic workers concerned with the acridoid fauna of Africa, was prepared by Dr. Uvarov, Director of the Anti-Locust Research Centre. His resumé of various aspects of locust problems in Africa should be read by all concerned with these matters in other areas. As there explained it was found essential for a sound approach to an understanding of African grasshopper problems to have a comprehensive systematic catalogue as a basis for work. The last world catalogue of the Acridoidea, published in 1910 by Kirby, was faulty in numerous respects; while the intervening years have seen an enormous increase in our knowledge of these insects, in Africa as elsewhere.

At the request of the Anti-Locust Research Centre, Dr. Johnston, who for years had been closely associated with locust problems in the Sudan and elsewhere, and whose knowledge of the fauna is comprehensive, devoted some years to the completion of the present catalogue, which brings together our knowledge of the systematics of African grasshoppers as of the end of the year 1953. All the families of the Acridoidea found in Africa, except the Tetrigidae, are included.

As the introduction states, "Nothing new in synonymy, taxonomy or distribution has been introduced, and though the arrangement of the material may present certain novel features, the work is in no sense a revision but merely a reference book." It would be a wonderful thing if those preparing similar catalogues could be persuaded to allow their presentations to rest solely on previously published analytic work, and to restrain tendencies to rearrange things without adequate presentation of reasons or demonstrable evidence. Unlike the treatment found

in numerous catalogues, the compiler has added a bibliography covering thirty-seven pages, which arrangement has materially reduced the bulk of the work by permitting the use of reduced reference citations. Aside from its immediate usefulness to one consulting the catalogue, this bibliography will be of the greatest value to present and future students of African grasshoppers.

The coverage of the catalogue embraces the continent of Africa and "the adjacent islands of the Atlantic and the Indian Ocean." The species whose distribution ranges extend beyond Africa required special treatment, and for these the more important non-African references and some of their synonymy are also included. In the case of the swarming locusts, on account of the great bulk of the economic and correlated literature bearing on them, it has been found possible to quote only the purely taxonomic and faunistic references for the five major African species of this category.

Since limitation of space has compelled the use of as concise an arrangement as possible consistent with clarity and ease of reference, full journal references are omitted from the systematic arrangement, but the papers can readily be located in the bibliography to which references are given by author, year and page. A system of symbols has been utilized to indicate the location of illustrations, misdeterminations, and preoccupied and substituted names. Genera have been arranged into subfamilies, tribes and groups according to usage as expressed in print up to the end of 1953. The compiler has noted "it is necessary to state here that no taxonomic or nomenclatorial value is attached to any names above the generic rank." In view of the fact that there are among some students of the African grasshopper fauna marked differences of opinion as to the worth, relative value and scope of numerous higher entities, Dr. Johnston is to be congratulated on this policy.

Immediately after the name of the genus, that of its type species is given, with an indication by a suitable term as to how, when, and by whom this was designated. The species in each genus are arranged alphabetically, subspecies are given under the nominate species with their treatment in general the same

as full species. References are arranged chronologically under species. Type localities are those "given by the original author with such supplementary information as may be given by a later reviser." The location of the type has been given wherever possible, "according to direct indication by the author, by inference from the original text, or from later references in literature," the owning institution being indicated by its abbreviated name, a listing of which is given in the introduction. Some few institutions cited in the body of the work, however, are not given in the introductory listing.

A very useful set of summarized annotations has been used to broaden the value of the catalogue as a reference work. These, given after each species, indicate which of the references cited presents a description, a figure, is in a key to species, or discusses the morphology, nymphal stages, ecology, bionomics, economic importance and distribution. Under the latter the references, which are individually numbered under each species, are grouped under North Africa, West Africa, East Africa, Central Africa, South Africa, Indian Ocean Islands, Atlantic Islands, and extra-African distribution.

To those who have prepared catalogues, even if only for personal use and not for publication, the amount of labor involved is well known and appreciated, and the meticulous way in which Dr. Johnston has brought together the exceedingly extensive and widely scattered information, which is summarized in this work, merits all possible praise. He, like all true bibliographers, has taken nothing second-hand, and citation errors of the past, which in some cases have been handed down through the years, have been corrected. The impersonal way in which the compiler has handled the literature gives to his work an exceptional character. The catalogue is fully indexed, and is as a whole a splendid piece of bookmaking. In its taxonomic, phylogenetic, and related aspects it is an excellent reference work, clearly a model for comprehensiveness, cohesiveness and ease of handling. To Dr. Johnston, to the Anti-Locust Research Centre, and to Dr. Uvarov, who inspired it, go the thanks of all who work to any degree with African acridoids. To the entomological fra-

ternity there has been given a model for similar works on other areas. Also we are promised supplements which will keep the general coverage of the subject relatively up to date.

JAMES A. G. REHN

Books Received

CAMRAS, S. and P. D. HURD. The Conopid flies of California. Bull. Calif. Insect Survey. Vol. 6, No. 2. Pp. 19–49. 4 figs., 25 maps. 1957. Price $0.75.

ELDRIDGE, B. E. and M. T. JAMES. The typical muscid flies of California. Bull. Calif. Insect Survey. Vol. 6, No. 1. Pp. 1–17. 3 plates, 4 maps. 1957. Price $0.50.

LANGSTON, R. L. A synopsis of hymenopterous parasites of Malacosoma in California. Univ. of Cal. Publications in Entomology. Vol. 14, No. 1. Pp. 1–50. Univ. of Cal. Press, Berkeley and Los Angeles, 1957. Price $1.00.

Ross, E. S. The Embioptera of California. Vol. 6, No. 3. Pp. 51–57. 7 figs. 1957. Price $0.50.

SNODGRASS, R. E. A revised interpretation of the external reproductive organs of male insects. Smithsonian Miscellaneous Collection. Vol. 135, No. 6. 1957. Pp. 60, ill. Washington, D. C., 1957.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Conopidae of the World wanted. Will pay 10¢ to $1.00 for pinned and labelled specimens. S. Camras, 4407 N. Milwaukee Ave., Chicago 30, Illinois.

Anisoptera—Nearctic sp. wanted for exchange, espec. Ophiog., Arigom., Aeschna, Neurocor., Somatoc., Cordulia, Dorocor., Leucor. R. D. Cuyler, Dept. of Entomology, N. C. State College, Raleign, N. C.

Bembicini and Stizini (Hym., Sphec.) of New World wanted for revis. study. Will return upon request or at end of project. James E. Gillaspy, Dept. of Zoology, Univ. Texas, Austin 12, Texas.

Agapema galbina. Will exchange cocoons of this moth for nature books. E. Frizzell, Route 4, Box 96, San Benito, Texas.

Tenebrionidae of the World wanted, in exchange for insects of Argentina and neighboring countries. Horacio J. Molinari, Av. Lib. Gral. San Martin 55, Acassuso (Buenos Aires), Rep. Argentina.

Butterflies. Wish to exchange specimens for Japanese species. Please write to Ichiro Nakamura (Boy, age 16), 26 Aza-Nishiyama Obayashi Takarazuka-shi, Hyogo-Ken, Japan.

Phasmidae of nearctic area desired alive. Purchase or trade, drawing on large stock of major orders, worldwide. Dominick J. Pirone, Dept. Entomology, Cornell University, Ithaca, N. Y.

Melanotus (Elateridae). Revising Nearctic species; desire to see all available specimens. Will return at end of study. L. W. Quate, Department of Entomology, University of Nebraska, Lincoln, Nebr.

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THE NEOTROPICAL SPECIES OF THE 'SUBGENUS AESCHNA' SENSU SELYSII 1883 (Odonata)

By Philip P. Calvert

This paper presents an account of the Neotropical species referred by de Selys in 1883 to his subgenus *Aeschna* and of some species unknown to him. His subgenus is here divided into three genera, *Aeschna, Coryphaeschna,* and *Castoraeschna, Aeshna* in its turn being subdivided into the subgenera *Aeschna, Hesperaeschna, Rhionaeschna, Schizuraeschna, Marmaraeschna* and *Neureclipa.* These five subgenera include 2, 15, 1, 3, 4 and 5 species and subspecies respectively. *Coryphaeschna* embraces 9 species and subspecies, *Castoraeschna* 5. Larvae of 2 species of *Hesperaeschna,* 1 species of *Schizuraeschna,* 1 species of *Neureclipa* and 6 species of *Coryphaeschna* are described and figured. Generalities are discussed under the headings: Relationships of the Neotropical Aeshnas to the North American fossils; Relations of the South American Aeshnas to the Palaearctic and Australian species; The geological age and geographical distribution of the ancestors of the Odonata and of the Mammalia; Relations of the Neotropical Aeshnas to each other; The seasonal distribution of the Neotropical species of Aeshna. Forty plates in black and white illustrate the structural and colorational features of the adults, seven those of the larvae. Nineteen tables show the variations in size and in venation of the adults. Six maps show the geographic distribution of all the species concerned. There is an alphabetical index of species, subgenera, genera, authors quoted, and topics.

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